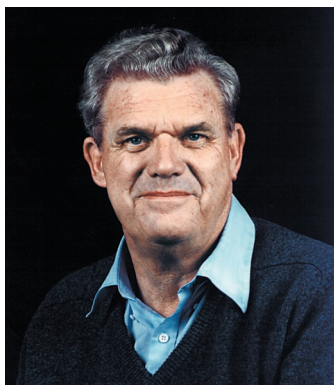




“Not the Brightest Student” — But Wins Nobel Prize

There is no greater prize for a scientist than the Nobel Prize, and in 1990, Dr. Richard Taylor became the first Canadian to win the prestigious award in physics. He and two U.S. colleagues shared the award for proving the existence of quarks. The team used a powerful linear accelerator, operating at 21 GeV, to bombard protons and neutrons with electrons. They discovered that protons and neutrons, once thought to be indivisible, are made of these quarks, the existence of which had been theorized but never proven.



Dr. Richard Taylor
*Courtesy Stanford Linear
Accelerator Center*

Born and raised in Medicine Hat, Alberta, Dr. Taylor was interested in experimental science from an early age, and this interest resulted in an accident that could have prematurely ended his science career. Several older boys showed him a formula for a better type of gunpowder than was available at that time. His attempt to follow the formula resulted in a powerful explosion that amputated three fingers of his left hand.

Dr. Taylor has said in interviews that he wasn't the brightest student in high school. "I did reasonably well in mathematics and science, thanks to some talented and dedicated teachers," he commented, "but I wasn't an outstanding student, although I did read quite a bit and high

school mathematics came quite easily to me. You don't necessarily have to be a great student to do well later in life, although it is always important to work hard."

After completing his undergraduate work at the University of Alberta, Dr. Taylor was accepted into the graduate program at Stanford University in California, where he has spent much of his working life. "I found I had to work hard to keep up with my fellow students," said Dr. Taylor, "but learning physics was great fun in those surroundings."

Dr. Taylor stresses the importance of an inquiring mind. "It's fun to understand things and you should learn all you can. Reading gives you independence and a sense of freedom," he said, adding that he believes it is important to be educated in a broad range of subjects. Curiosity and a love of experimentation drive Dr. Taylor. While he has a great respect for theoretical physicists, calling them "smarter" than experimental physicists, he feels that "in experimental science, you can make contributions more easily."

Still a resident of California, Dr. Taylor works at the Stanford Linear Accelerator Center, also spending time in Europe at the HERA laboratories in Germany. After his prize-winning work to discover the quark, he is now interested in searching for gravitational waves and is involved with a new satellite experiment to detect high-energy gamma rays from sources in outer space.

Although at age 71 Dr. Taylor considers most of his scientific contributions to be behind him, much more work lies ahead in the field of particle physics. To the next generation of physicists, he says, "What the young people have to deal with is the fact that there are three generations of quarks. There are the quarks that everything we know of is made of, and then there are two more sets of quarks. The question is: Why are they there?" Dr. Taylor expects this question to occupy the physicists of tomorrow "for the next 50 years."